RTIP ID# *(required)*
SBD031279

TCWG Consideration Date
1/22/2008

Project Description *(clearly describe project)*
The City of Hesperia (City), in conjunction with the California Department of Transportation (Caltrans), the San Bernardino Associated Governments (SANBAG), and the Federal Highway Administration (FHWA), proposes to construct a new full-service interchange at Interstate 15 (I-15) and Ranchero Road. The interchange would be a diamond configuration with a bridge to extend Ranchero Road across I-15. Under one of two alternatives (Build Alternative 5), a southbound loop on-ramp would be incorporated into the interchange. Realignment of frontage roads would also be required.

Type of Project *(use Table 1 on instruction sheet)*
New interchange

County	**Narrative Location/Route & Postmiles**
San Bernardino	I-15 PM R29.5/30.9 **Caltrans Projects – EA#** 08-34160

Lead Agency: Caltrans (oversight); City of Hesperia (responsible/cooperating agency, sponsor)

Contact Person	**Phone#**	**Fax#**	**Email**
Dave Reno	760-947-1253	(909) 919-7939	dreno@cityofhesperia.us

Hot Spot Pollutant of Concern *(check one or both)* **PM2.5** **PM10** X

Federal Action for which Project-Level PM Conformity is Needed *(check appropriate box)*

Categorical Exclusion (NEPA)		**EA or Draft EIS**	**FONSI or Final EIS**	**PS&E or Construction**	**Other**
	X				

Scheduled Date of Federal Action:

NEPA Delegation – Project Type *(check appropriate box)*

Exempt	**Section 6004 – Categorical Exemption**		**Section 6005 – Non-Categorical Exemption**
		X	

Current Programming Dates *(as appropriate)*

	PE/Environmental	**ENG**	**ROW**	**CON**
Start	6/01/06	4/16/08	1/19/09	6/21/10
End	1/16/09	2/23/10	5/19/10	11/18/11

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*
The proposed project would provide access and accommodate traffic for existing and planned development within the limits of the City and would also improve traffic operations by reducing congestion on the adjacent I-15/Oak Hill Road, I-15/Joshua Street and I-15/Main Street interchanges.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*
Land uses surrounding project roadways are either contained within the City of Hesperia or are located outside of City limits but within the City's sphere of influence. Single-family residential development is located east of I-15 and south of Ranchero Boulevard. Additional single-family residential development is located on either side of Ranchero Boulevard east of the proposed eastward realignment of Mariposa Road. The land on either side of Ranchero Road between I-15 and Corlander Drive on the east, and between I-15 and Oro Grade Wash on the west, is generally undeveloped. Land to the west of the project site between Oro Grande Wash and I-15 is designated for Community Center Development (CCD, see OH/PD-CCD use in Oak Hills Community Plan). To the east of the freeway on both sides of Ranchero Road the land is designated for Commercial (C, see OH/PD-FD use in Oak Hills Community Plan). The OH/PD-CCD designation is for mixed use development, with residential limited to a maximum of four (4) dwelling units per acre. The OH/PD-FD designation is for Freeway Development purposes, with retail, service, industrial and regional commercial uses allowed.

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Tables 1 and 2 summarize predicted link level of service (LOS) and annual average daily traffic (AADT) for segments of I-15 both north and south of the proposed interchange. For each peak period, LOS is presented for the worst-case direction of travel.

Table 1 - Link LOS and AADT: I-15 near Ranchero Road (2013), 14% trucks

	No Build				Build			
	Link LOS[1]		AADT		Link LOS[1]		AADT	
Segment	AM	PM	Total	Trucks	AM	PM	Total	Trucks
North of Ranchero Rd.	D	D	138,850	19,450	C	C	125,850	17,600
South of Ranchero Rd.					C	C	151,050	21,150
Average	***D***	***D***	***138,850***	***19,450***	***C***	***C***	***138,450***	***19,400***

[1] LOS shown for worst-case direction of travel.

RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Table 2 - Link LOS and AADT: I-15 near Ranchero Road (2035), 14% trucks

	No Build				Build			
	Link LOS[1]		AADT		Link LOS[1]		AADT	
Segment	AM	PM	Total	Trucks	AM	PM	Total	Trucks
North of Ranchero Rd.	C	D	169,800	23,750	C	C	153,900	21,550
South of Ranchero Rd.					C	C	184,700	25,850
Average	***C***	***D***	***169,800***	***23,750***	***C***	***C***	***169,300***	***23,700***

[1] LOS shown for worst-case direction of travel.

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

As indicated in Tables 3 and 4, below, the proposed project would be expected to redistribute some traffic in the area towards the segments of Ranchero Road near the proposed interchange. However, that redistribution is expected to reduce traffic flow along other roadways and improve level of service at intersections within in the project vicinity. Those effects are addressed in subsequent portions of this form.

Table 3 - Link AADT: Ranchero Road East of Mariposa Road (2013), 2% trucks

No Build		Build	
Total	Trucks	Total	Trucks
13,300	250	18,100	350

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

Table 4 - Link AADT: Ranchero Road East of Mariposa Road (2035), 2% trucks

No Build		Build	
Total	Trucks	Total	Trucks
13,900	300	22,550	450

Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)*
The overall number of intersections experiencing poor peak-hour levels of service and the severity of the associated congestion at those intersections are expected to decrease under Build conditions, as illustrated in Tables 5 and 6.

Table 5 – Predicted Intersection Levels of Service[1]: 2013

Intersection	No Build		Build	
	AM	PM	AM	PM
Mariposa Rd. at I-15 NB Ramps	B	**F**	A	B
Oak Hill Rd. at I-15 SB Ramps	**F**	B	C	A
Mariposa Rd. at Oak Hill Rd.	**F**	**D**	C	B
Ranchero Rd. at Caliente Rd.	N/A	N/A	A	B
Ranchero Rd. at I-15 SB Ramps	N/A	N/A	B	B
Ranchero Rd. at I-15 NB Ramps	N/A	N/A	A	B
Ranchero Rd. at Mariposa Rd.	B	B	C	B
Joshua St. at U.S. 395	B	C	B	B
Joshua St. at I-15 NB Ramp	A	A	A	A
Joshua St. at I-15 SB Ramp	B	B	B	B

[1] LOS values that fall short of the City's LOS goal ("C" or better) are represented in **bold-faced type**.

Table 6 – Predicted Intersection Levels of Service[1]: 2035

Intersection	No Build		Build	
	AM	PM	AM	PM
Mariposa Rd. at I-15 NB Ramps	C	**F**	B	**F**
Oak Hill Rd. at I-15 SB Ramps	**F**	B	B	B
Mariposa Rd. at Oak Hill Rd.	**F**	**F**	**E**	**F**
Ranchero Rd. at Caliente Rd.	N/A	N/A	A	B
Ranchero Rd. at I-15 SB Ramps	N/A	N/A	C	A
Ranchero Rd. at I-15 NB Ramps	N/A	N/A	A	D
Ranchero Rd. at Mariposa Rd.	**F**	C	C	B
Joshua St. at U.S. 395	B	**D**	B	D
Joshua St. at I-15 NB Ramp	A	A	A	A
Joshua St. at I-15 SB Ramp	A	A	A	A

[1] LOS values that fall short of the City's LOS goal ("C" or better) are represented in **bold-faced type**.

Ultimately, the effect of the proposed project on regional PM emissions through traffic redistribution and congestion relief can best be assessed by considering the project's influence on vehicle miles traveled (VMT) and associated average vehicular travel speeds. Table 7 estimates the influence of those factors on emissions of PM_{10} during the PM peak hour period along segments of freeway (I-15) and major unlimited-access roadways (including a portion of Highway 395) in the vicinity of the project. It is during the peak commute periods (the periods considered in Tables 5 and 6) – and particularly during the PM peak period -- that the proportional contribution of the proposed project to congestion relief and associated emissions reductions would be greatest. Relative to the predicted distribution of VMT among "Other Vehicles" (mostly light-duty automobiles and light-duty trucks) and "Trucks" (the heavier-duty vehicles), the emissions reduction benefit is predicted to be disproportionately high for "Other Vehicles" relative to "Trucks" because the congestion relief will tend to be greatest for the dominant commute direction, and automobile traffic (unlike truck traffic) is expected to be distributed disproportionately in that direction. On a daily basis, both total emissions and the project-related reduction in those emissions would be expected to be higher than what is reported here, although the percentage reduction in emissions associated with the project would be lower than the approximately 20 percent reduction shown in this table.

Describe potential traffic redistribution effects of congestion relief *(continued)*

Table 7 - Estimated Future (Year 2030) PM Peak Hour Emissions[1] of PM_{10} From Vehicular Travel Along Roadway Segments in the Project Vicinity Based on Predicted VMT and Speeds

Scenario	Autos[2]			Trucks[2]			Total PM_{10} Emissions for All Vehicles (pounds per PM peak hour)[4]
	VMT[3]	Average Speeds (mph)[3]	PM_{10} Emissions (pounds per PM peak hour)[4]	VMT[3]	Average Speeds (mph)[3]	PM_{10} Emissions (pounds per PM peak hour)	
No Build	226,100	17	23.3	33,000	23	5.4	28.7
Build	224,100	20	18.3	33,000	26	5.2	23.5
Difference	***-1,000***	***+3***	***-5.0***	***0***	***+3***	***-0.2***	***-5.2***

[1] Emission estimates were derived using emission factors for the MDAB portion of San Bernardino County using the EMFAC2007 model promulgated by the California Air Resources Board (CARB).
[2] The specific classes of vehicle types categorized under "Other Vehicles" and "Trucks" were based on the classifications used in the applicable SCAG transportation demand model. Specifically, the SCAG model segregates light-heavy, medium-heavy and heavy-heavy trucks under their Heavy-duty Truck (HDT) category. For the purposes of this table, those vehicles are categorized as "Trucks".
[3] VMT and corresponding average travel speed values were derived from the modeling used for the Traffic Study for this project. The links for which these predictions were obtained include all of the non-centroid-connector links in the project-specific model; that is, those links that provide an explicit geometric representation of freeway and other major roadway segments within the study area.
[4] Emission factors were derived from PM peak hour average speed data generated in the traffic model using EMFAC2007. Intermediate composite factors were developed for those EMFAC2007 vehicle classes corresponding to SCAG's Heavy-duty Truck category and corresponding to all other vehicle classes (for the "Other Vehicles" category considered in this table). Those composite factors were then multiplied by the applicable predicted PM peak hour VMT value and converted to units of pounds to produce pounds per PM peak hour estimates.

Comments/Explanation/Details

The proposed project is intended to improve traffic flow and reduce congestion in the area. The project is a proposed new interchange, and is located in an area designated nonattainment for the National Ambient Air Quality Standard (NAAQS) for PM_{10} (although it is designated as unclassified/attainment with respect to the $PM_{2.5}$ NAAQS). However, the data presented in this form suggest that the proposed project would not be a project of air quality concern (POAQC). Project/site conditions do not conform to any of the following standard examples of projects that would be considered POAQCs:

Covered by 40 CFR 93.123(b)(1)(i) and (ii):

1. A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) and 8% or more [8] of such AADT is diesel truck traffic (***the project is along an existing highway, not a new one***);
2. New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal (***no such major freight, bus, or intermodal terminals are involved***);
3. Expansion of an existing highway or other facility that affects a congested intersection (operated at Level-of-Service D, E, or F) that has a significant increase in the number of diesel trucks (***per Tables 5 and 6, conditions at all such congested intersections are predicted to improve at least slightly under Build conditions – in most cases resulting in an upgrade in the LOS value***); and,
4. Similar highway projects that involve a significant increase in the number of diesel transit busses and/or diesel trucks (***For any given analysis year, Tables 1 through 4 show that average truck AADT along the nearest sections of I-15 would be expected to remain virtually unchanged with the project, while the estimated increase in trucks along Ranchero Road – about 100 to 150 per day – would be relatively small***. ***Table 7 shows that overall heavy truck VMT in the study area would be expected to decrease slightly under build conditions.)***

Covered by 40 CFR 93.123(b)(1)(iii) and (iv) are:

5. A major new bus or intermodal terminal that is considered to be a "regionally significant project" under 40 CFR 93.101 [9] (***the project involves no such new bus or intermodal terminal***); and,
6. An existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses increases by 50% or more, as measured by bus arrivals (***the project involves no such new bus or intermodal terminal)***.

As Table 7 shows, total emissions of PM_{10} in the study area during the PM peak hour (worst-case conditions) would be expected to decrease substantially with the project. Given that result, and given that the project/site conditions do not match any of the standard examples of a POAQC presented above, the findings presented in this form suggest that the project is not a POAQC.